



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,104	03/18/2004	Cheng-Qun Gui	081468-0308709	5313
909	7590	08/23/2005	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			KIM, PETER B	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2851	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/803,104

Applicant(s)

GUI ET AL.

Examiner

Peter B. Kim

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6 and 19 is/are allowed.
- 6) ☒ Claim(s) 7-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 10/043,271.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 72005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Applicant's arguments filed on July 7, 2005 have been fully considered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7 and 14 contain a trademark.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (5,929,997) in view of Nakamura et al. (Nakamura) (JP 2000299276).

Lin discloses a device manufacturing method comprising: projecting a patterned beam of radiation with a lithographic projection apparatus (col. 1, lines 8-15), onto a target area of a layer of radiation sensitive material on a first surface of a substrate (140), the substrate including second surface including at least one alignment marker (150), the second surface being supported by a substrate table (145), coupling light from the one alignment marker on the second surface of the substrate through the substrate table, directing the light upwards in a direction parallel to the

Art Unit: 2851

optical axis of a projection system (Fig. 2), aligning the substrate using alignment system optically coupled to the upwardly directed light (Fig. 2, col. 5, lines 15-25), and forming at least one patterned layer on the first surface and the alignment is performed without using alignment markers on the first surface of the substrate (col. 5, lines 15-25). Lin discloses the alignment system which is an off-axis alignment system (Fig. 2), forming patterned layers on the first surface without using alignment markers on the first surface of the substrate (col. 5, lines 15-25). However, Lin does not disclose the alignment optical system located in the substrate table. Nakamura discloses alignment optical system located in the substrate table. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the alignment optical system located in the substrate table in order to combine two different structures of Lin into one as in Nakamura to conserve workspace.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Nakamura as applied to claim 8 above, and further in view of van Empel et al. (Empel).

The further difference between the claimed invention and the modified Lin is the substrate table made of ceramic material. Empel discloses in col. 2, lines 26-32, substrate table or support made of ceramic material. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the substrate support made of ceramic material to the invention of Lin in order to obtain mechanical and thermal stability as taught by Empel in col. 2, lines 26-32.

Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sogard in view of Nakamura.

Sogard discloses in Fig. 1, 2A and 5A, a device manufacturing method comprising projecting a patterned beam of radiation (7, 20), onto a target area of a layer of radiation sensitive material (30) on a first surface having alignment mark (38), the substrate including a second surface opposite to the first surface and including at least one alignment marker (22, 44), the second surface supported by a substrate table (30); coupling light from the alignment marker to an off-axis alignment system (15), coupling light from the alignment marker (22,, 44) to a location adjacent an edge of the substrate (Fig. 1) or directing the light upward in a direction parallel to an optical axis of a projection system (Fig. 1), aligning the substrate using the system and based on the alignment forming at least one patterned layer on the first surface wherein the alignment is performed without using alignment markers on the first surface of the substrate. Sogard discloses optical system (14, 13, 15) to form an image in a plane which is substantially perpendicular to an optical axis of the alignment system, the image located outside of a perimeter of the substrate (16). However, Sogard does not disclose an optical system in the substrate table. Nakamura discloses alignment optical system located in the substrate table. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the alignment optical system located in the substrate table in order to combine two different structures of Sogard into one as in Nakamura to conserve workspace.

Allowable Subject Matter

Claims 1-6 and 19 are allowed.

Art Unit: 2851

Response to Arguments

Applicant's arguments with respect to claims 8-13, and 15-17 have been considered but are moot in view of the new ground(s) of rejection.

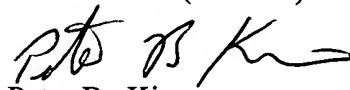
Capitalizing and including the trademark symbol is appropriate for written description, but not for claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Peter B. Kim
Primary Examiner
Art Unit 2851

August 19, 2005